Digital Diploma Mills, Part I

The Automation of Higher Education

Recent events at two large North American universities signal dramatically that we have entered a new era in higher education, one which is rapidly drawing the halls of academe into the age of automation. In mid- summer the UCLA administration launched its historic "Instructional Enhancement Initiative" requiring computer web sites for all of its arts and sciences courses by the start of the Fall term, the first time that a major university has made mandatory the use of computer telecommunications technology in the delivery of higher education. In partnership with several private corporations (including the Times Mirror Company, parent of the Los Angeles Times), moreover, UCLA has spawned its own for-profit company, headed by a former UCLA vice chancellor, to peddle online education (the Home Education Network).

This past spring in Toronto, meanwhile, the full-time faculty of York University, Canada's third largest, ended an historic two-month strike having secured for the first time anywhere formal contractual protection against precisely the kind of administrative action being taken by UCLA. The unprecedented faculty job action, the longest university strike in English Canadian history, was taken partly in response to unilateral administrative initiatives in the implementation of instructional technology, the most egregious example of which was an official solicitation to private corporations inviting them to permanently place their logo on a university online course in return for a $10,000 contribution to courseware development. As at UCLA, the York University administration has spawned its own subsidiary (Cultech), directed by the vice president for research and several deans and dedicated, in collaboration with a consortium of private sector firms, to the commercial development and exploitation of online education.

Significantly, at both UCLA and York, the presumably cyber-happy students have given clear indication that they are not exactly enthusiastic about the prospect of a high-tech academic future, recommending against the Initiative at UCLA and at York lending their support to striking faculty and launching their own independent investigation of the commercial, pedagogical, and ethical implications of online educational technology. This Fall the student handbook distributed annually to all students by the York Federation of Students contained a warning about the dangers of online education.

Thus, at the very outset of this new age of higher education, the lines have already been drawn in the struggle which will ultimately determine its shape. On the one side university administrators and their myriad commercial partners, on the other those who constitute the core relation of education: students and teachers. (The chief slogan of the York faculty during the strike was "the classroom vs the boardroom"). It is no accident, then, that the high-tech transformation of higher education is being initiated and implemented from the top down, either without any student and faculty involvement in the decision-making or despite it. At UCLA the administration launched their Initiative during the summer when many faculty are away and there was little possibility of faculty oversight or governance; faculty were thus left out of the loop and kept in the dark about the new web requirement until the last moment. And UCLA administrators also went ahead with its Initiative, which is funded by a new compulsory student fee, despite the formal student recommendation against it. Similarly the initiatives of the York administration in the deployment of computer technology in education were taken without faculty oversight and deliberation much less student involvement.

What is driving this headlong rush to implement new technology with so little regard for deliberation of the pedagogical and economic costs and at the risk of student and faculty alienation and opposition? A short answer might be the fear of getting left behind, the incessant pressures of "progress". But there is more to it. For the universities are not simply undergoing a technological transformation.

Beneath that change, and camouflaged by it, lies another: the commercialization of higher education. For here as elsewhere technology is but a vehicle and a disarming disguise.

The major change to befall the universities over the last two decades has been the identification of the campus as a significant site of capital accumulation, a change in social perception which has resulted in the systematic conversion of intellectual activity into intellectual capital and, hence, intellectual property. There have been two general phases of this transformation. The first, which began twenty years ago and is still underway, entailed the commoditization of the research function of the university, transforming scientific and engineering knowledge into commercially viable proprietary products that could be owned and bought and sold in the market. The second, which we are now witnessing, entails the commoditization of the educational function of the university, transforming courses into courseware, the activity of instruction itself into commercially viable proprietary products that can be owned and bought and sold in the market. In the first phase the universities became the site of production and sale of patents and exclusive licenses. In the second, they are becoming the site of production of - as well as the chief market for - copyrighted videos, courseware, CD-ROMs, and Web sites.

The first phase began in the mid-1970's when, in the wake of the oil crisis and intensifying international competition, corporate and political leaders of the major industrialized countries of the world recognized that they were losing their monopoly over the world's heavy industries and that, in the future, their supremacy would depend upon their monopoly over the knowledge which had become the lifeblood of the new so-called "knowledge-based" industries (space, electronics, computers, materials, telecommunications, and bioengineering). This focus upon "intellectual capital" turned their attention to the universities as its chief source, implicating the universities as never before in the economic machinery. In the view of capital, the universities had become too important to be left to the universities. Within a decade there was a proliferation of industrial

partnerships and new proprietary arrangements, as industrialists and their campus counterparts invented ways to socialize the risks and costs of creating this knowledge while privatizing the benefits. This unprecedented collaboration gave rise to an elaborate web of interlocking directorates between corporate and academic boardrooms and the foundation of joint lobbying efforts epitomized by the work of the Business-Higher Education Forum. The chief accomplishment of the combined effort, in addition to a relaxation of anti-trust regulations and greater tax incentives for corporate funding of university research, was the 1980 reform of the patent law which for the first time gave the universities automatic ownership of patents resulting from federal government grants. Laboratory knowledge now became patents, that is Intellectual capital and intellectual property. As patent holding companies, the universities set about at once to codify their intellectual property policies, develop the infrastructure for the conduct of commercially-viable research, cultivate their corporate ties, and create the mechanisms for marketing their new commodity, exclusive licenses to their patents. The result of this first phase of university commoditization was a wholesale reallocation of university resources toward its research function at the expense of its educational function.

Class sizes swelled, teaching staffs and instructional resources were reduced, salaries were frozen, and curricular offerings were cut to the bone. At the same time, tuition soared to subsidize the creation and maintenance of the commercial infrastructure (and correspondingly bloated administration) that has never really paid off. In the end students were paying more for their education and getting less, and the campuses were in crisis.*

The second phase of the commercialization of academia, the commoditization of instruction, is touted as the solution to the crisis engendered by the first. Ignoring the true sources of the financial debacle - an expensive and low-yielding commercial infrastructure and greatly expanded administrative costs - the champions of computer-based instruction focus their attention rather upon increasing the efficiencies of already overextended teachers. And they ignore as

well the fact that their high-tech remedies are bound only to compound the problem, increasing further, rather then reducing, the costs of higher education. (Experience to date demonstrates clearly that computer-based teaching, with its limitless demands upon instructor time and vastly expanded overhead requirements - equipment, upgrades, maintenance, and technical and administrative support staff - costs more not less than traditional education, whatever the reductions in direct labor, hence the need for outside funding and student technology fees). Little wonder, then, that teachers and students are reluctant to embrace this new panacea. Their hesitation reflects not fear but wisdom.**

But this second transformation of higher education is not the work of teachers or students, the presumed beneficiaries of improved education, because it is not really about education at all. That's just the name of the market. The foremost promoters of this transformation are rather the vendors of the network hardware, software, and "content" - Apple, IBM, Bell, the cable companies, Microsoft, and the edutainment and publishing companies Disney, Simon and Schuster, Prentice-Hall, et al - who view education as a market for their wares, a market estimated by the Lehman Brothers investment firm potentially to be worth several hundred billion dollars. "Investment opportunity in the education industry has never been better," one of their reports proclaimed, indicating that this will be "the focus industry" for lucrative investment in the future, replacing the healthcare industry. (The report also forecasts that the educational market will eventually become dominated by EMO's - education maintenance organizations - just like HMO's in the healthcare market). It is important to emphasize that, for all the democratic rhetoric about extending educational access to those unable to get to the campus, the campus remains the real market for these products, where students outnumber their distance learning counterparts six-to-one.

In addition to the vendors, corporate training advocates view online education as yet another way of bringing their problem-solving, information- processing, "just-in-time" educated employees up to profit- making speed. Beyond their ambitious

in-house training programs, which have incorporated computer-based instructional methods pioneered by the military, they envision the transformation of the delivery of higher education as a means of supplying their properly-prepared personnel at public expense .

The third major promoters of this transformation are the university administrators, who see it as a way of giving their institutions a fashionably forward-looking image. More importantly, they view computer-based instruction as a means of reducing their direct labor and plant maintenance costs - fewer teachers and classrooms - while at the same time undermining the autonomy and independence of faculty. At the same time, they are hoping to get a piece of the commercial action for their institutions or themselves, as vendors in their own right of software and content. University administrators are supported in this enterprise by a number of private foundations, trade associations, and academic-corporate consortia which are promoting the use of the new technologies with increasing intensity. Among these are the Sloan, Mellon, Pew, and Culpeper Foundations, the American Council on Education, and, above all, Educom, a consortium representing the management of 600 colleges and universities and a hundred private corporations.

Last but not least, behind this effort are the ubiquitous technozealots who simply view computers as the panacea for everything, because they like to play with them. With the avid encouragement of their private sector and university patrons, they forge ahead, without support for their pedagogical claims about the alleged enhancement of education, without any real evidence of productivity improvement, and without any effective demand from either students or teachers.

In addition to York and UCLA, universities throughout North America are rapidly being overtaken by this second phase of commercialization. There are the stand-alone virtual institutions like University of Phoenix, the wired private institutions like the New School for Social Research, the campuses of state universities like the University of Maryland and the new Gulf-Coast campus of the University of Florida (which boasts no tenure). On the state level, the states of Arizona and

California have initiated their own state-wide virtual university projects, while a consortia of western "Smart States" have launched their own ambitious effort to wire all of their campuses into an online educational network. In Canada, a national effort has been undertaken, spearheaded by the Telelearning Research Network centered at Simon Fraser University in Vancouver, to bring most of the nation's higher education institutions into a "Virtual U" network.

The overriding commercial intent and market orientation behind these initiatives is explicit, as is illustrated by the most ambitious U.S. effort to date, the Western Governors' Virtual University Project, whose stated goals are to "expand the marketplace for instructional materials, courseware, and programs utilizing advanced technology," "expand the marketplace for demonstrated competence," and "identify and remove barriers to the free functioning of these markets, particularly barriers posed by statutes, policies, and administrative rules and regulations."

"In the future," Utah governor Mike Leavitt proclaimed, "an institution of higher education will become a little like a local television station." Start up funds for the project come from the private sector, specifically from Educational Management Group , the educational arm of the world's largest educational publisher Simon and Schuster and the proprietary impulse behind their largesse is made clear by Simon and Schuster CEO Jonathan Newcomb: "The use of interactive technology is causing a fundamental shift away from the physical classroom toward anytime, anywhere learning - the model for post secondary education in the twenty- first century." This transformation is being made possible by "advances in digital technology, coupled with the protection of copyright in cyberspace."

Similarly, the national effort to develop the "Virtual U" customized educational software platform in Canada is directed by an industrial consortium which includes Kodak, IBM, Microsoft, McGraw-Hill, Prentice-Hall, Rogers Cablesystems, Unitel, Novasys, Nortel, Bell Canada, and MPR Teltech, a research subsidiary of GTE. The commercial thrust behind the project is explicit

here too. Predicting a potential fifty billion dollar Canadian market, the project proposal emphasizes the adoption of "an intellectual property policy that will encourage researchers and industry to commercialize their innovations" and anticipates the development of "a number of commercially marketable hardware and software products and services," including "courseware and other learning products." The two directors of the project, Simon Fraser University professors, have formed their own company to peddle these products in collaboration with the university. At the same time, the nearby University of British Columbia has recently spun off the private WEB-CT company to peddle its own educational website software, WEB-CT, the software designed by one of its computer science professors and now being used by UCLA. In recent months, WEB-CT has entered into production and distribution relationships with Silicon Graphics and Prentice-Hall and is fast becoming a major player in the American as well as Canadian higher education market. As of the beginning of the Fall term, WEB CT licensees now include, in addition to UCLA and California State University, the Universities of Georgia, Minnesota, Illinois, North Carolina, and Indiana, as well as such private institutions as Syracuse, Brandeis, and Duquesne.

The implications of the commoditization of university instruction are two-fold in nature, those relating to the university as a site of the production of the commodities and those relating to the university as a market for them. The first raises for the faculty traditional labor issues about the introduction of new technologies of production. The second raises for students major questions about costs, coercion, privacy, equity, and the quality of education.

With the commoditization of instruction, teachers as labor are drawn into a production process designed for the efficient creation of instructional commodities, and hence become subject to all the pressures that have befallen production workers in other industries undergoing rapid technological transformation from above. In this context faculty have much more in common with the historic plight of other skilled workers than they care to acknowledge. Like these others, their activity is being restructured, via the technology, in order

to reduce their autonomy, independence, and control over their work and to place workplace knowledge and control as much as possible into the hands of the administration. As in other industries, the technology is being deployed by management primarily to discipline, deskill, and displace labor.

Once faculty and courses go online, administrators gain much greater direct control over faculty performance and course content than ever before and the potential for administrative scrutiny, supervision, regimentation, discipline and even censorship increase dramatically. At the same time, the use of the technology entails an inevitable extension of working time and an intensification of work as faculty struggle at all hours of the day and night to stay on top of the technology and respond, via chat rooms, virtual office hours, and e-mail, to both students and administrators to whom they have now become instantly and continuously accessible. The technology also allows for much more careful administrative monitoring of faculty availability, activities, and responsiveness.

Once faculty put their course material online, moreover, the knowledge and course design skill embodied in that material is taken out of their possession, transferred to the machinery and placed in the hands of the administration. The administration is now in a position to hire less skilled, and hence cheaper, workers to deliver the technologically prepackaged course. It also allows the administration, which claims ownership of this commodity, to peddle the course elsewhere without the original designer's involvement or even knowledge, much less financial interest. The buyers of this packaged commodity, meanwhile, other academic institutions, are able thereby to contract out, and hence outsource, the work of their own employees and thus reduce their reliance upon their in-house teaching staff.

Most important, once the faculty converts its courses to courseware, their services are in the long run no longer required. They become redundant, and when they leave, their work remains behind. In Kurt Vonnegut's classic novel Player Piano the ace machinist Rudy Hertz is flattered by the automation engineers who tell him his genius will be immortalized. They buy him a beer.

They capture his skills on tape. Then they fire him. Today faculty are falling for the same tired line, that their brilliance will be broadcast online to millions. Perhaps, but without their further participation. Some skeptical faculty insist that what they do cannot possibly be automated, and they are right. But it will be automated anyway, whatever the loss in educational quality. Because education, again, is not what all this is about; it's about making money. In short, the new technology of education, like the automation of other industries, robs faculty of their knowledge and skills, their control over their working lives, the product of their labor, and, ultimately, their means of livelihood.

None of this is speculation. This Fall the UCLA faculty, at administration request, have dutifully or grudgingly (it doesn't really matter which) placed their course work - ranging from just syllabi and assignments to the entire body of course lectures and notes - at the disposal of their administration, to be used online, without asking who will own it much less how it will eventually be used and with what consequences. At York university, untenured faculty have been required to put their courses on video, CD- ROM or the Internet or lose their job. They have then been hired to teach their own now automated course at a fraction of their former compensation. The New School in New York now routinely hires outside contractors from around the country, mostly unemployed PhDs, to design online courses. The designers are not hired as employees but are simply paid a modest flat fee and are required to surrender to the university all rights to their course. The New School then offers the course without having to employ anyone. And this is just the beginning.

Educom, the academic -corporate consortium, has recently established their Learning Infrastructure Initiative which includes the detailed study of what professors do, breaking the faculty job down in classic Tayloristic fashion into discrete tasks, and determining what parts can be automated or outsourced. Educom believes that course design, lectures, and even evaluation can all be standardized, mechanized, and consigned to outside commercial vendors. "Today you're looking at a highly personal human- mediated environment,"

Educom president Robert Heterich observed. "The potential to remove the human mediation in some areas and replace it with automation - smart, computer-based, network-based systems - is tremendous. It's gotta happen." Toward this end, university administrators are coercing or enticing faculty into compliance, placing the greatest pressures on the most vulnerable - untenured and part-time faculty, and entry-level and prospective employees. They are using the academic incentive and promotion structure to reward cooperation and discourage dissent. At the same time they are mounting an intensifying propaganda campaign to portray faculty as incompetent, hide-bound, recalcitrant, inefficient, ineffective, and expensive - in short, in need of improvement or replacement through instructional technologies. Faculty are portrayed above all as obstructionist, as standing in the way of progress and forestalling the panacea of virtual education allegedly demanded by students, their parents, and the public.

The York University faculty had heard it all. Yet still they fought vigorously and ultimately successfully to preserve quality education and protect themselves from administrative assault. During their long strike they countered such administration propaganda with the truth about what was happening to higher education and eventually won the support of students, the media, and the public. Most important, they secured a new contract containing unique and unprecedented provisions which, if effectively enforced, give faculty members direct and unambiguous control over all decisions relating to the automation of instruction, including veto power. According to the contract, all decisions regarding the use of technology as a supplement to classroom instruction or as a means of alternative delivery (including the use of video, CD-ROM's, Internet websites, computer-mediated conferencing, etc.) "shall be consistent with the pedagogic and academic judgements and principles of the faculty member employee as to the appropriateness of the use of technology in the circumstances." The contract also guarantees that "a faculty member will not be required to convert a course without his or her agreement." Thus, the York faculty will be able to ensure that

the new technology, if and when used, will contribute to a genuine enhancement rather than a degradation of the quality of education, while at the same time preserving their positions, their autonomy, and their academic freedom. The battle is far from won, but it is a start.

The second set of implications stemming from the commoditization of instruction involve the transformation of the university into a market for the commodities being produced. Administrative propaganda routinely alludes to an alleged student demand for the new instructional products. At UCLA officials are betting that their high-tech agenda will be "student driven", as students insist that faculty make fuller use of the web site technology in their courses. To date, however, there has been no such demand on the part of students, no serious study of it, and no evidence for it. Indeed, the few times students have been given a voice, they have rejected the initiatives hands down, especially when they were required to pay for it (the definition of effective demand, i.e. a market). At UCLA, students recommended against the Instructional Enhancement Initiative. At the University of British Columbia, home of the WEB-CT software being used at UCLA, students voted in a referendum four-to-one against a similar initiative, despite a lengthy administration campaign promising them a more secure place in the high tech future. Administrators at both institutions have tended to dismiss, ignore, or explain away these negative student decisions, but there is a message here: students want the genuine face-to- face education they paid for not a cybercounterfeit. Nevertheless, administrators at both UCLA and UBC decided to proceed with the their agenda anyway, desperate to create a market and secure some return on their investment in the information technology infrastructure. Thus, they are creating a market by fiat, compelling students (and faculty) to become users and hence consumers of the hardware, software, and content products as a condition of getting an education, whatever their interest or ability to pay. Can all students equally afford this capital-intensive education?

Another key ethical issue relates to the use of student online activities. Few students realize that their computer-based courses are often thinly- veiled field

trials for product and market development, that while they are studying their courses, their courses are studying them. In Canada, for example, universities have been given royalty-free licenses to Virtual U software in return for providing data on its use to the vendors. Thus, all online activity including communications between students and professors and among students are monitored, automatically logged and archived by the system for use by the vendor. Students enrolled in courses using Virtual U software are in fact formally designated "experimental subjects." Because federal monies were used to develop the software and underwrite the field trials, vendors were compelled to comply with ethical guidelines on the experimental use of human subjects. Thus, all students once enrolled are required to sign forms releasing ownership and control of their online activities to the vendors. The form states "as a student using Virtual U in a course, I give my permission to have the computer-generated usage data, conference transcript data, and virtual artifacts data collected by the Virtual U software. . . used for research, development, and demonstration purposes. " According to UCLA's Home Education Network president John Korbara, all of their distance learning courses are likewise monitored and archived for use by company officials. On the UCLA campus, according to Harlan Lebo of the Provost's office, student use of the course websites will be routinely audited and evaluated by the administration. Marvin Goldberg, designer of the UCLA WEB-CT software acknowledges that the system allows for "lurking" and automatic storage and retrieval of all online activities. How this capability will be used and by whom is not altogether clear, especially since websites are typically being constructed by people other than the instructors. What third parties (besides students and faculty in the course) will have access to the student's communications? Who will own student online contributions? What rights, if any, do students have to privacy and proprietary control of their work? Are they given prior notification as to the ultimate status of their online activities, so that they might be in a position to give, or withhold, their informed consent? If students are taking courses which are just experiments, and hence of unproven pedagogical

value, should students be paying full tuition for them? And if students are being used as guinea pigs in product trials masquerading as courses, should they be paying for these courses or be paid to take them? More to the point, should students be content with a degraded, shadow cybereducation? In Canada student organizations have begun to confront these issues head on, and there are some signs of similar student concern emerging also in the U.S.

In his classic 1959 study of diploma mills for the American Council on Education, Robert Reid described the typical diploma mill as having the following characteristics: "no classrooms," "faculties are often untrained or nonexistent," and "the officers are unethical self-seekers whose qualifications are no better than their offerings." It is an apt description of the digital diploma mills now in the making. Quality higher education will not disappear entirely, but it will soon become the exclusive preserve of the privileged, available only to children of the rich and the powerful. For the rest of us a dismal new era of higher education has dawned. In ten years, we will look upon the wired remains of our once great democratic higher education system and wonder how we let it happen. That is, unless we decide now not to let it happen.

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Notes

* Tuition began to outpace inflation in the early 1980's, at precisely the moment when changes in the patent system enabled the universities to become major vendors of patent licenses. According to data compiled by the National Center for Educational Statistics, between 1976 and 1994 expenditures on research increased 21.7% at public research universities while expenditure on instruction decreased 9.5%. Faculty salaries, which had peaked in 1972, fell precipitously during the next decade and have since recovered only half the loss.

** Recent surveys of the instructional use of information technology in higher education clearly indicate that there have been no significant gains in either productivity improvement or pedagogical enhancement. Kenneth C. Green , Director of the Campus Computing Project, which conducts annual surveys of information technology use in higher education, noted that "the campus experience over the past decade reveals that the dollars can be daunting, the return on investment highly uncertain." "We have yet to hear of an instance where the total costs (including all realistically amortized capital investments and development expenses, plus reasonable estimates for faculty and support staff time) associated with teaching some unit to some group of students actually decline while maintaining the quality of learning," Green wrote. On the matter of pedagogical effectiveness, Green noted that "the research literature offers, at best, a mixed review of often inconclusive results, at least when searching for traditional measures of statistical significance in learning outcomes."

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